Adolescent Inhalant Abuse

Participant's Handbook and Workshop Guide

AADAC
Alberta Alcohol and Drug Abuse Commission
An Agency of the Government of Alberta

Adolescent Inhalant Abuse

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Acknowledgements

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Table of Contents

Workshop Goals 1

Questionnaire on Inhalant Abuse 1

Questions to Ponder 2

Definition of Terms 3

Chemical Ingredients of Solvents/Inhalants 4

Methods of Use 5

Physiological and Short-term Effects 6
- Identifying Users 6
- Short-term Effects 6
- Stages of a Typical Sniffing Episode 7
- Symptoms of Acute intoxication 8

Demographic and Motivational Factors 9
- Demographic Factors 9
- Motivational Factors 11

Hazards and Medical Conditions 14
- Hazards 14
- Medical Conditions 16
- Tolerence and Withdrawal 22

Emergency Treatment 23

The Special Needs of Adolescents 24
- Adolescent Development 24
- Some Highlights of Teen Development 26
- Adolescent Substance Abuse and Development Issues 27

Assessment 29

Real Life Situations for Group Discussion 31

Community Prevention, Intervention, Treatment and Aftercare 33
- Overview 33
- Examples of Inhalant Abuse Programs—Canadian 34
- Community Program Development 37
- An Example of Community Action 42

Group Project 44

References 45

Videos 50

Workshop Goals

Participants will:

1. Be familiar with the demographic characteristics of inhalant abusers.
2. Be familiar with the medical, social and psychological effects of inhalant abuse.
3. Understand the development of adolescents and their special needs in relation to substance abuse in general and inhalant abuse in particular.
4. Explore community strategies for dealing with inhalant abuse with emphasis on prevention, intervention and treatment.
5. Have opportunities to share their expertise with others.

Questionnaire on Inhalant Abuse

Answer each statement with true, false, or don't know.

1 _____ Inhalants are considered drugs like alcohol, barbiturates, amphetamines, tobacco, marijuana, etc.

2 _____ Sniffing always causes irreversible brain and other organ damage.

3 _____ Inhalants are used by only adolescents.

4 _____ Sniffing is simply a passing fad.

5 _____ Most kids sniff because it makes them feel good.

6 _____ It is illegal to sniff.

7 _____ Inhalants are usually used by people with severe personality disorders.

8 _____ Many young people try sniffing, but give it up.

9 _____ Inhalants affect users much the same way as alcohol does, except that users experience hallucinations.

10 _____ Most kids can be scared away from the use of inhalants.

11 _____ Inhalants are physically addicting.

12 _____ Most sniffers feel inhalants are superior to other drugs.

13 _____ Most sniffers require placement in a residential treatment program to help them stop sniffing.

14 _____ Detoxification is much quicker with inhalants than with other drugs.

15 _____ A good time to start counselling a sniffer regarding quitting is when he/she is 'high' and feeling vulnerable.

16 _____ If young people had more information about sniffing, they would quit.

Questions to Ponder

1 What would you do if you saw a 15-year-old drinking on his/her way to school?

What would you do if you saw a 15-year-old sniffing on his/her way to school?

2 What would you do if you came across a group of kids drinking in a back alley?

What would you do if you came across a group of kids sniffing in a back alley?

3 What would you do if your younger brother (who is of legal age) asked you to pick up a six pack for him?

What would you do if your younger brother (who is of legal age) asked you to pick up some sniff for him?

4 What would you do if your 16-year-old asked you if she can have a drink of the wine that is being served with dinner?

What would you do if your 16-year-old asked you if she can have a sniff before dinner?

5 What would you do if your teenager told you he needed some Valium (having had it prescribed before by an M.D.) to help him get through the anxiety attacks he is experiencing?

What would you do if your teenager told you he needed some sniff to get him through the anxiety attacks he is experiencing?

Definition of Terms

Drugs substances other than food which, upon entering the body, can change either the function or structure of the organism. Inhalants affect the functioning of the central nervous system and are therefore, by definition, drugs.

Solvents liquids that can dissolve other substances. Solvents are usually volatile; i.e., they readily evaporate at room temperature and pressure. Solvents include a variety of common household products.

Inhalants chemicals that evaporate easily and whose vapours, when inhaled, produce mind-altering effects. Solvents are the most common type of inhalant; however not all inhalants can be classified as solvents. Inhalants also include anesthetics and aerosols.

Depressants drugs that slow down body functions, depress the central nervous system, relax, tranquillize, or produce sleep. Inhalants act as central nervous system depressants.

Hallucinogens drugs also known as psychedelics, dramatically affect perception, emotions, mental processes, distort the senses and can cause hallucinations.

Hallucination a false sensory perception having no real external cause. Inhalants can produce both visual and auditory hallucinations.

The practice of inhaling vapours for recreational purposes has many different names. The most common is glue sniffing. This term is actually incorrect, for it is the solvent in the glue that is inhaled, not the glue itself. Other names for this practice include: solvent abuse, inhalant abuse, solvent inhalation, inhalation of volatile substances, toxic vapour inhalation, volatile substance abuse, or 'sniffing.'

Chemical Ingredients of Solvents/Inhalants*

Abused Product	Chemical Ingredients
> typewriter correction fluid (Liquid Paper)®	trichlorethylene
> cleaning fluid, spot remover	trichlorethylene, naphtha, (carbon tetrachloride—no longer in use)
> lighter fluid	naphtha
> gasoline	toluene, naphtha, n-hexane, other solvents, lead, benzene
> paint, lacquer and varnish thinners	toluene, naphtha, acetates, methylene chloride
> marking pencils	toluene, naphtha
> aerosols: paint sprays, hair sprays, air fresheners, cookware coating agents	toluene, acetone, propane (freons—no longer in use)
> household cements, plastic cement, airplane glue	toluene, acetone, n-hexane
> liquid shoe polish	toluene
> nail polish remover	acetone, ethyl, methyl, acetate
> pure solvents	toluene, acetone, ethyl ether

* This is a much simplified list including only examples of the major ingredients known to be toxic. Benezene and carbon tetrachloride are no longer used in most industrial or any household products. Also, freons are no longer used as the propellants for most aerosol sprays.

Methods of Use

There are many different ways to inhale solvents, including:

- squeezing the contents of a tube of glue into a plastic or paper bag and inhaling the contents;
- saturating a cloth, mitten, tissue, etc. with solvent and holding it over the face or putting it directly into the mouth;
- sniffing directly from a container or gas tank;
- spraying the propellant from aerosols directly into the mouth or into a balloon and allowing the balloon to implode inside the mouth;
- spraying directly on clothes.

Other less common methods include:

- heating the solvent on the stove to increase the rate at which the vapour evaporates (a highly risky practice given the inflammability of the products);
- filling a bathtub with solvent, closing the bathroom door and inhaling the fumes;
- mixing the solvent with alcohol to increase the potency of both.

Physiological and Short-term Effects

Identifying Users

People who work with inhalant abusers become skillful at spotting someone who is sniffed up. The easiest way is by smell. Solvents leave a characteristic unpleasant odour on the breath and clothes. This odour may linger for many hours or even days. Large quantities of a product or products in unusual places may also be a sign of inhalant abuse.

Other signs of habitual use may include:

- facial rash;
- glue on hands and clothes;
- chronic nosebleed;
- increased salivation and spitting;
- sores in the nose and mouth;
- dry throat/throat infections;
- bloodshot eyes;
- lack of appetite;
- little energy or motivation;
- chronic ear infections;
- acne-like condition on face.

It should be noted that many of these signs also indicate poor health in general, or an underlying medical problem. Their presence doesn't conclusively indicate chronic inhalant abuse.

Short-term Effects

Acute intoxication with solvents has been described as a quick "drunk." The symptoms are similar to alcohol intoxication, but are more rapid in onset and briefer in duration. Like alcohol, solvents are nervous system depressants and thus enhance the effects of alcohol and other depressant drugs such as sleeping pills and tranquillizers. The danger of overdose increases if these drugs are used together.

The user will usually experience an initial excitation followed by depression. They may have feelings of euphoria, disinhibition, exhilaration, ringing in the ears, dizziness, and blurred vision. To the observer, the person shows poor coordination, slurred speech and impaired judgement, followed by lethargy and increased sleepiness.

With increasing intoxication, the person may become agitated, disoriented, and experience headaches, abdominal cramps, nausea, vomiting, and chest pain. Extreme intoxication may cause general muscle weakness; difficulty speaking; hallucinations (visual, and less commonly, auditory); disruptive behaviour; and, rarely, convulsions.

The effects of solvent use last for 30 to 45 minutes after cessation of exposure; however, the pleasurable "high" usually lasts only 4 or 5 minutes. Some degree of amnesia about the event is common on recovery. Several hours after, the user is usually lethargic and hung over, especially if they have slept, with mild to severe headache.

Solvents are fat soluble and are stored in lipids—fatty substances found in the brain and throughout the central nervous system. The body disposes of solvents in three ways; they are metabolised by the liver, excreted in the urine and exhaled. Expelling solvents from the body can take a considerable amount of time as they are stored and then released over time—much more slowly than alcohol.

Stages of a Typical Sniffing Episode

It is difficult to predict what will occur during a sniffing episode or to describe a typical episode. Sniffing episodes vary considerably depending upon the substance and method used, the amount inhaled, the setting of the experience, and the general mind set and health of the individual user. However, Wyse (1973) has described a typical episode as a progressive sequence consisting of four stages.

1 **Excitatory or induction**—euphoria, excitation, exhilaration, dizziness, visual and auditory hallucinations, sneezing, coughing, intolerance to light, nausea, vomiting, flushed skin and bizarre behaviour.

2 **Early CNS (Central Nervous System) depression**—disorientation, dullness, loss of self-control, ringing in the ears, blurred vision, double vision, cramps, headache, analgesia (cessation of pain), and pallor.

3 **Medium CNS depression**—drowsiness, lack of muscular coordination, inability to coordinate voluntary body movements, slurred speech, depressed reflexes, and spastic movement of the eyeball (nystagmus).

4 **Late CNS depression**—stupor, delirium or unconsciousness, bizarre dreams, epileptic-type seizures, EEG changes.

Not every sniffer will experience each and every stage. An experienced and controlled sniffer may know exactly how much of a particular substance is needed to produce the desired effect (to remain in stage one, for example). Another sniffer may inhale an excessive amount at the onset, skip stages one to three and pass out almost immediately. A high can be maintained for many hours by periodic sniffs.

The user may experience amnesia regarding his/her actions during the acute stage of intoxication and may have a headache or hangover after intoxication has worn off.

Symptoms of Acute Intoxication

Sensory	light sensitivity eye irritation double vision ringing in the ears
Respiratory	sneezing running nose coughing
Gastrointestinal	nausea vomiting diarrhea loss of appetite
Other	chest pain abnormal heart rhythm muscle and joint aches

Demographic and Motivational Factors

Demographic Factors

1. Prevalence

It is difficult to gather accurate information on the prevalence of inhalant abuse. In part, this lack of information stems from a general disinterest in this problem due to the long standing belief that it is restricted to marginal populations and thus does not warrant attention. As well, research problems such as difficulties defining inhalants and varied wording of survey questions hamper interpretation of survey results. Plus, the social stigma attached to sniffing means people are reluctant to report inhalant use (Edwards and Oetting; 1995; Heath, 1994).

Despite these difficulties, it is generally agreed that inhalant abuse is a complex, world-wide problem. There are reports of problems from diverse and scattered regions including Finland, Japan, Mexico, the Netherlands, Central and South America, Canada, and the United States (Heath, 1994; MacLennan, 1993). In the past, the prevalence of inhalant abuse was best known among Inuits, Native Americans, Australian Aboriginals, and homeless children throughout Central and South America (Heath, 1994).

The countries that used to make up the Soviet Union have one of the largest inhalant problems in the world. Hugh Young, the Executive Director of SAFE (Solvent Abuse Foundation for Education), stated at an international prevention conference in Washington that the restrictive measures implemented to reduce alcohol abuse (particularly vodka) resulted in abusers of vodka becoming abusers of inhalants (Solvents..., 1993).

Although inhalants data are limited, there are some statistics from Canada, the U.S., and Britain. In 1992, a survey of street youth in Toronto by Ontario's Addiction Research Foundation (ARF) found 29% of males reported experience with inhalants. As well, when asked about "major problems" with current drug use, 29% of all the youth surveyed reported inhalants, second only to crack (44%) (MacLennan, 1993).

In the U.S., the National Institute on Drug Abuse has sponsored random studies of high school seniors' drug use since the 1980s. Study findings show some variation in use from year to year with 17% reporting ever using inhalants in 1992. This means that about one out of six seniors has tried inhalants at some time (Edwards and Oetting, 1995).

Great Britain is one of the few countries to monitor deaths from inhalant use. In 1989, 963 deaths were recorded from sniffing with one in five of the deaths occurring with first-time inhalant use (Johns, 1991). Most were male (88%), with almost half (48%) of all the deaths occurring in persons aged 16 or younger and 87% in those under age 25.

2. Age and Gender

Research suggests that inhalant use is primarily practiced by youth. Surveys in the U.S. show that peak years of use are grades eight to ten (Heath, 1994). Up to about grade six and after grade ten, males are more likely to use inhalants than females. However, in grades seven through nine there are very small gender differences in inhalant use in the U.S. (Edwards and Oetting, 1995). Some U.S. experts suggest that, in terms of social and experimental inhalant use, the differences between males and females are narrowing (MacLennan, 1993).

In Canada, according to the 1993 First Nations and Inuit Community Youth Solvent Abuse Survey, aboriginal solvent users are most often male (69%) and between 12 and 15 (36%) or 16 and 19 years of age (29%). Females (32%) who use solvents tend to be slightly younger, with almost half (45%) being between 12 and 15 years of age. This age pattern varies across Canada with more younger users in B.C. and older users in Newfoundland and Labrador (Kaweionnehta Human Resource Group, 1993 cited in McKenzie, 1995).

3. Socioeconomic Factors

There is general agreement that inhalant abuse traditionally occurs among the poor and marginalized (MacLennan, 1993). In other words, regular users have tended to be poor, lack education, and have an unstable family life (Heath, 1994). It is unclear whether inhalant use is increasing among more affluent children. However, there is evidence that pockets of populations have higher levels of inhalant use than levels of use documented in student surveys. Moreover, some experts maintain that inhalant abuse serves to perpetuate cycles of poverty, unemployment, and unstable family life (MacLennan, 1993).

4. Race and Ethnicity

In the past, it has been suggested that race or ethnicity may predispose certain groups to inhalant abuse. For example, there is an over-representation of inhalant abuse among Hispanic youth in the U.S. (Johns, 1991). Research shows there is nothing inherent in a particular racial or ethnic group that would predispose it to inhalant abuse. Rather, socioeconomic conditions account for the reported racial and ethnic differences. Consequently, high levels of inhalant use among some indigenous populations around the world relates more to economic deprivation and social inequality than to inherent racial or ethnic differences (Edwards and Oetting, 1995).

Motivational Factors

1. Peer and Sibling Influences

Both peer and sibling influences are considered to be major contributing factors to inhalant abuse. There is little doubt that sniffing is learned from others. Sniffing may begin when a child mimics the behaviour of an older sibling. The shift from family to friends is a normal, natural part of growing up. The peer group, which takes on greater importance as the young person reaches adolescence, can have a positive or negative influence on an individual member. Unfortunately, the peer group of the chronic sniffer is almost always involved in chronic sniffing as well.

2. Labelling

Once a young person has been identified as a "sniffer," the label sticks. The young person gets caught up in a vicious cycle brought about by the extreme social stigma that is attached to sniffing. Only other sniffers will accept him/her, leaving little choice but to hang out with the sniffing crowd. An effective intervention could target youth who don't sniff to teach them to be more tolerant and understanding of the sniffer's needs.

3. School Performance

There is general agreement that a strong relationship exists between lack of success in school and inhalant abuse. It has been found that chronic sniffers are as much as two grades behind their non-sniffing peers; however, it is unlikely that these differences are due to lack of intelligence. Chronic sniffers display high rates of truancy and absenteeism, discipline problems, frustration and failure.

Their school experience has been anything but rewarding. Schools are the places where society's standards appear in marked contrast to their own. Their social and cultural experiences may conflict with what is regarded by mainstream society as "normal" or "acceptable." Many experience the pain and humiliation that result from racism. Some simply can't concentrate or stay awake because they are hungry. They soon learn that painful experiences can be forgotten, if only temporarily, through the use of inhalants. And once they start sniffing, the inhalant abuse itself contributes to poor school performance.

It is believed that many chronic sniffers drop out or are asked to leave before they reach high school. Unfortunately, this actually reduces their contact with the non-sniffing community. It also interferes with the young person's chance of obtaining employment and severely limits his/her future prospects. Out of school and out of work is often a prescription for conflict with the law or further escape into drug or alcohol abuse.

4. Social/Psychological Factors

There is no evidence that a particular personality type, disorder, or pathology causes or leads to inhalant abuse. However, it is generally agreed that users indulge in the practice to eliminate feelings of helplessness and depression, and to escape reality. Sniffers often display high rates of:

- hopelessness;
- depression;
- anxiety;
- alienation;
- passivity;
- low self-esteem.

(Jacobs and Ghodse, 1987; Lowenstein, 1984; Smart, 1986; Zur and Yule, 1990).

Because personality is influenced to a great extent by environmental and social factors and since the environment of sniffers is often psychologically damaging, it is not surprising that many sniffers display these characteristics.

There are a number of factors that must be considered in order to see inhalant abuse in its proper perspective. There is widespread acceptance of "legitimate" drug use to deal with life's stresses: relaxing with a drink after a frustrating day of work; taking over-the-counter pain killers to curb a stress-induced headache; taking mood-altering prescription drugs when on edge. These forms of drug- taking behaviour are commonplace and acceptable for the adult population. Young people are given contradictory messages.

Chronic sniffers may not think of addressing life's problems in any other way than through the use of chemicals. They may not have seen problems handled in other ways. As one young sniffer stated, "When people have problems they have nothing else to turn to. You can't get booze, you can't get dope. So they turn to sniff" (Pearce, 1982, p.76).

5. Other Factors

Cohen, in his work *Why Solvents?* (1979), identified a number of factors which contribute to the attractiveness of inhalants, particularly to low-income young people.

- Low cost—inhalants are relatively cheap compared to other drugs. This is important given the socioeconomic position and youthfulness of the sniffing population.
- Easy availability—young people often have difficulty obtaining other drugs. Inhalants can be obtained virtually anywhere: department, hardware and grocery stores, at home, at construction sites, or at any service station or gas tank.

- Convenient packaging—a tube of glue can be easily stolen and concealed.
- The nature of the intoxication—the rapidity and duration of the high are attractive features. One can very quickly feel a "buzz" or become totally "blotto" depending on the desired result.
- Minimal legal hassles—in most places, sniffing or possession of sniff is not illegal. In Alberta, an individual can be charged under the Provincial Public Health Act, but this does not often occur. Also, the minor fine does not usually have a deterrent effect, particularly for a chronic sniffer. Many young people are not deterred from drinking under age or smoking marijuana even though there are legal restrictions.

In spite of these factors, we know that the experiences of sniffers are often unpleasant (physical illness, frightening hallucinations and hangovers), and it is believed that sniff is not usually the drug of choice for most sniffers, but the one that is available.

Sniffing, like other forms of drug use, is only a symptom of a much larger social problem. It can be better understood when viewed from the perspective of a disadvantaged young person who feels hopeless and obtains few rewards from a sober existence.

Of course, solvent abuse cannot be addressed in isolation or on an individual basis alone. It is a social problem demanding social responses. For youth who are involved in chronic sniffing, it may be a sign of protest and at the same time a resignation to the social conditions that they experience. It may be viewed as a release from their grief and suffering. And it is a message, no matter how inarticulate, for those of us who care to listen. Perhaps then, the first thing we must do is learn how to listen (Pearce, 1982).

Hazards and Medical Concerns

Hazards

While much attention has been paid to the long-term toxic effects of chemicals commonly inhaled, there are serious short-term hazards as well.

In the acute phase of intoxication, the primary danger results from the user's impairment. Bad judgement and lack of coordination can result in serious injury to the user or those around him/her. The user may be a very young person, one who is not yet adept at dealing with feelings of fear and aggression. Loss of control can occur almost immediately, due to the rapid onset of intoxication. Some of the short-term hazards include the following:

- **Euphoria**

  Although most sniffers seek a feeling of euphoria, this same feeling can result in a sense of omnipotence and often leads to impulsive or destructive behaviour. Sniffers often report that when under the influence they feel like they can do anything or be anybody.

- **Panic**

  Impulsive and dangerous acts can occur in response to panic. A young person may become frightened and unwittingly run in front of a car or attempt an impossible feat in an attempt to "get away."

- **Model Psychoses**

  Model psychoses are temporary psychotic-like reactions, characterized by loss of orientation, hallucinations and illusions. They sometimes lead to acts such as attempting to fly, stopping a train, etc.

  The hallucinations that many young sniffers report are often extremely frightening. A recurring theme mentioned by some sniffers is the presence of the devil or a spirit (often that of a dead friend or relative). Under these circumstances, an ordinarily quiet and gentle young person can become panicky, aggressive or violent.

  The hallucinatory experience will depend a great deal on the psyche of the individual. An individual who is at peace with him/herself and in a state of emotional well-being is more likely to have a positive hallucinatory experience, "a good trip." However, an individual who is angry, hurt, frightened and/or hostile may not have such a pleasant time. The prevalence of "bad trips" reported by chronic sniffers gives insight into their psychological state.

- **Violence and Aggression**

  Many sniffers become violent when angered or frightened while "sniffed up." Homicide and suicide have been known to occur. It is believed that the experience of frightening hallucinations has a great deal to do with this.

- **Suffocation**

  Users sometimes pass out with their heads still in a plastic bag. If the bag is covering the air passages, suffocation will result, particularly if the person is sniffing alone.

- **Burns**

  Solvents are highly inflammable and users sometimes burn themselves. Burns can occur if the chemicals are spilled on clothing and a cigarette or burning match comes into contact with the fabric or if a lit match or cigarette is tossed into an open container of a volatile chemical.

- **Asphyxiation**

  Inhaling cookware coating agents from aerosols can be extremely dangerous. In an attempt to inhale the propellant, sniffers may accidently inhale the coating agent itself. If this occurs, the oily substance can coat the lungs, preventing oxygen from reaching the brain. Even if resuscitation efforts are successful, brain damage can result if oxygen was cut off for any length of time.

  Users have also been known to choke on their own vomit if they pass out lying on their backs.

Medical Concerns

The following section is taken from *Chronic Solvent/Inhalant Abuse: Medical Considerations in Recovery, AADAC, 1994.* It contains more medical information than is necessary to facilitate this work. It is included here to serve as a future reference for participants.

Information about the toxic effects of solvents is incomplete and difficult to assess. Many of the studies are of chronic low level exposure or rare overdoses that occur in industrial workers. This information is of limited value with respect to abusers who repeatedly expose themselves to extremely high concentrations of solvents. As chronic abusers tend to be transient and unreliable study participants, study of the toxic effects of their solvent abuse is very difficult. In addition, abused products are usually a mixture of different chemicals. The abusers use a variety of other drugs, including alcohol and tobacco, and their lifestyles do not include good nutrition or medical care. Despite these limitations, a growing body of knowledge is available about the toxicity of chronic solvent abuse. This information will be summarized and clinically relevant assessment and special treatments will be included here.

1. Nervous System

Chronic solvent abuse can cause severe damage to the nervous system. Brain damage can result in movement disorders and possible intellectual impairment. Numbness, weakness and muscle paralysis can result from damage to peripheral nerves; vision and hearing may also be impaired.

The type of damage varies depending on the specific solvent and how much and for how long it has been abused. Some slow improvement usually occurs if the abuse stops, but much of the damage is often irreversible (Fornazzari, Wilkinson, Kapur and Carlen, 1983, Hormes, Filley and Rosenberg, 1986).

Toluene is especially toxic to the brain. Chronic abuse can result in irreversible dementia, movement disorders (cerebellar ataxia), muscle spasticity, and other effects on the brain (Hormes, Filley and Rosenberg, 1986). Gasoline and inhalants containing n-hexane can cause peripheral nerve damage, resulting in numbness and muscle weakness.

a) Brain Damage

Intellectual impairment—despite the many studies published, there are still differing opinions about the effects of chronic solvent abuse on intellectual functioning. While numerous studies have reported varying degrees of impairment (Allison and Jerrom, 1984, Fornazzari et al., 1983, Zur and Yule, 1990), several recent, thorough reviews have concluded that no firm conclusions can be reached because of flaws in available studies (Ron, 1986; Chadwick, Anderson, Bland and Ramsey, 1991).

One recent, carefully controlled study concluded that "volatile substance abuse as commonly practiced by secondary school pupils is unlikely to result in neuropsychological impairment." Although users scored lower than controls, the

differences were not significant when social background circumstances were considered. Similar well-designed studies are necessary to clarify the effects of heavy use.

While toluene is the solvent most frequently associated with brain damage, including intellectual impairment, users have almost always been exposed to a variety of solvents.

Cerebellar syndrome (movement disorders)—the cerebellum, that part of the brain that controls body movement, is a major target for toluene toxicity in chronic solvent users. As first described by Grabski in 1961, patients with this kind of brain damage have nystagmus (abnormal eye movements), an abnormal gait (walk), ataxia (uncoordinated muscle movements), and tremor (Grabski, 1961, Lolin, 1989). A number of subsequent reports have confirmed these findings, although toluene was rarely the only solvent used (Lolin, 1989).

Transient cerebellar signs are a common feature of acute toluene intoxication and in some cases these signs persist. However, how often they occur and how much recovery occurs with time remains unclear. Severe cases of brain damage presenting with dementia are usually associated with cerebellar signs.

Structural damage—in 1983, Fornazzari and his coworkers at the Ontario Addiction Research Foundation provided convincing evidence that toluene can produce structural changes in the brain (Fornazzari et al., 1983). Using the newer X-ray techniques (CT scans), they found atrophy of important parts of the brain in 11 of 24 toluene abusers. The brain shrinkage correlated with the clinical evidence of brain damage. Similar results have been found using magnetic resonance imaging, an even newer method of studying the brain (Rosenberg et al., 1988).

Although the studies are still very much preliminary, the evidence of structural damage that correlates with clinical signs of brain damage provides strong indications of the significant brain damage that may result from chronic solvent abuse. Other contributing factors and the permanence of the damage remain to be determined.

Psychiatric disability—the psychiatric diagnoses of solvent abusers do not appear to differ much from those of well-matched non-abusers. Symptoms that are common during acute intoxication should not be confused with chronic psychiatric illness. Also, problems that may have led to solvent abuse must be separated from those that might follow it.

Although some reports have suggested that solvent abuse may actually cause major psychiatric disorders (Byrne, Kirby, Zibin & Ensminger, 1991), there is little research evidence to support this contention. On the other hand, personality disorders of an antisocial type are common in solvent abusers, particularly in those who also abuse alcohol and other drugs (Ron, 1986).

b) Peripheral Nerve Damage (peripheral neuropathy)

Damage to peripheral nerves is well-documented in abusers of n-hexane and has occurred following occupational exposure to methyl butyl ketone. The role of toluene and other solvents is less clear, but two mild cases have been reported in a group of 24 chronic toluene sniffers (Fornazzari et al., 1983).

Symptoms of peripheral nerve damage usually start within weeks or months of exposure, and fairly rapid deterioration continues for some weeks after it has stopped (Ron, 1986). Initially, a loss of sensation occurs in the hands and feet. If abuse continues, symmetrical paralysis and muscle atrophy develop in the legs and sometimes in the arms as well.

When abuse stops, the extent of improvement varies, but impairment has persisted for at least eight or nine months. Follow-up over longer periods of time does not appear to have been reported (Chadwick et al., 1991).

2. Gasoline-related Toxicity

"Gasoline sniffing" is a special case of inhalant abuse. As described above, the toluene and n-hexane present in gasoline can cause damage to the central nervous system as well as to peripheral nerves. Benzene is another toxic solvent that is sometimes present in gasoline.

Other important toxicities from gasoline sniffing are a result of lead poisoning from the breakdown of tetraethyl lead, an anti-knock agent added to gasoline.* In cases with high lead levels, hallucinations and disorientation, difficulty speaking, and convulsions have occurred. As well, progressive dementia can develop. Symptoms have also included moderate to severe ataxia (uncoordinated muscle movements), insomnia, anorexia, tremors of the arms and legs, and sometimes paralysis (Rosenberg and Sharp, 1992).

Because many of the symptoms associated with lead poisoning can be reversed with treatment, it is important to check blood and urine lead levels. Blood lead levels exceeding 1.95 µM, have been treated with the chelating agents: EDTA (calcium versenate), BAL (British antilewisite), and/or D-penicillamine (Remington and Hoffman, 1984; Fortenberrry, 1985).

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* In Canada, unleaded gasoline has no lead added during the production process but may contain lead concentrations up to 5 mg/L. As well the use of a low-leaded gasoline, concentrations not to exceed 30 mg/L, is still permitted for use in farm machinery, boats, heavy duty truck and at certain competition racing events

3. Kidneys

Chronic solvent abuse can cause severe kidney damage (Nelson et al., 1990; Streicher et al., 1981; Lauwerys et al., 1985). Most damage appears to resolve if solvent use is discontinued, but irreversible damage has been reported. Toluene is often proposed as the cause of kidney damage, but in most severe cases, more than one solvent has been abused.

Patients may present with acute kidney failure, with low or no urine being produced. Plasma creatinine and blood urea nitrogen (BUN) levels will rise and frequently a hyperchloremic (high chloride ion), acidosis (low pH) develops with hypokalemia (low potassium), hypocalcemia (low calcium) and other electrolyte imbalances. These effects may result from damage to the tubules of the kidney or to excessive breakdown of body muscles (rhabdomyolysis).

In severe cases, patients have generalized muscle weakness, nausea, vomiting, and mental confusion. Some authors now suggest that solvent abuse be considered in cases of unexplained acute kidney failure especially in young patients (Gupta, van der Meulen, and Johny, 1991).

In most cases, correction of the electrolyte imbalances (including potassium, calcium, magnesium, and chloride) will restore kidney function in a few days. However, in one reported case, the patient died despite a reasonable period of treatment (Kirk, Anderson, and Martin, 1984). Caution has been suggested in the use of bicarbonate early in the treatment of these patients (Lavoie et al., 1987).

A more chronic form of kidney disease (glomerulonephritis) is also associated with heavy solvent abuse. This condition will result in protein (albumin), red blood cells (erythrocytes) and white blood cells (leukocytes) being present in the urine.

One report suggests that pregnant women who abuse solvents may be prone to kidney damage. Five cases of renal tubular acidosis were reported in pregnant women; all responded to treatment for electrolyte imbalances (Goodwin, 1988).

4. Liver

Chronic solvent abusers frequently have abnormal liver function. In most cases studied to date, liver function tests have returned to normal within several weeks after solvent abuse has stopped. However, if abuse continues the liver abnormalities persist (Fornazzari, 1988).

Heavy alcohol use, which also causes liver toxicity, is frequently associated with solvent abuse. This combination may be a particular problem as the users become older and have used the substances for many years. Assessing liver function becomes even more important in these patients.

Several liver function tests can be affected. The serum aminotransferases (alanine minotransferase [ALT], the more specific marker of liver damage, and aspartate aminotransferase [AST]) are often elevated; and prothrombin time and partial thromboplastin time (indicators of blood clotting) are prolonged.

The chlorinated hydrocarbons found in solvents have long been known to be toxic to the liver. They include trichlorethylene which is contained in cleaning fluids, spot removers, typewriter correction fluid, and the anesthetics chloroform and halothane. Other solvents found in the commercial preparations commonly abused may also cause liver damage or may potentiate the effects of those known to be toxic to the liver.

Exposure to high doses of some solvents and anesthetics have also been reported to cause cancer of the liver and other cancers. Cancer has not yet been reported as a complication in chronic solvent abusers.

5. Lungs (respiratory system)

Although solvents are irritants and toxic to tissues, there have been few reported cases of severe direct effects on the lungs. However, chronic solvent abusers frequently present with lung inflammation, pneumonia, and other infections. Repeated exposure to highly concentrated solvent mixtures may predispose to bacterial and viral infections.

Smoking is a factor that should be considered in assessing the effects of solvent abuse on the lungs. In addition, the depressant effects of solvents on the respiratory system may contribute to the Sudden Death Syndrome discussed in the next section (Fornazzari, 1988).

Most deaths associated with solvent abuse likely result from asphyxia. While breathing solvent from a plastic bag over the face or head the user becomes unconscious and suffocates.

6. Heart and Blood Vessels (cardiovascular system)

Arrhythmias (abnormal heart rhythms) have been associated with abuse of a variety of solvents. These abnormalities can be serious and result in death. In addition to the flurocarbons in aerosol sprays, other solvents implicated include hospital anesthetics (halothane), trichlorethylene, gasoline, propane, butane and possibly toluene.

When arrhythmias are observed, use of antiarrhythmic therapy is recommended (McLeod et al., 1987). Since excitement, exercise and stimulants such as adrenaline worsen the abnormalities, they should be avoided. Also, anesthesia should not be induced in patients shortly after intoxication and halogenated hydrocarbon anesthetics such as halothane should probably be avoided where heavy solvent exposure is suspected (Rosenberg and Sharp, 1992).

7. Sudden Sniffing Death

The sudden death of solvent abusers, where no anatomical cause of death was present, was labeled the sudden sniffing death syndrome in a 1970 report of 110 cases in the U.S. (Bass, 1970). These deaths are frequently associated with excitement or exercise. The resulting release of adrenaline and noradrenaline by the body stimulates the heart, already sensitized by the solvents, and probably causes serious abnormal rhythms and cardiac arrest, resulting in death. Unfortunately, many of these deaths are reported in first-time users of solvents.

Many of the earlier cases of sudden sniffing death were associated with the fluorocarbons in aerosol sprays. Since the ban on CFC's (chlorofluocarbons), instigated because of the concern about their effects on atmospheric ozone concentrations, the number of cases has decreased. However, replacement fuels and propellants such as propane and butane are now being reported as a cause of sudden sniffing deaths (Siegel and Wason, 1992). These fuels are also of particular concern as a fire hazard.

8. Bone Marrow and Blood

Only a few solvents have been reported to act on the bone marrow and blood (hematopoietic system) in humans. Benzene is best known for these effects, but methylene chloride also affects this system.

Benzene is a well established cause of severe (aplastic) anemia and of leukemia (cancer of the blood cells) (Lauwerys, Bernard, Viau, and Buchet, 1985). Because it is so toxic, benzene is no longer used in most industrial products or any household products in Canada. However, solvent abusers continue to be exposed because it is costly to remove all benzene from toluene preparations. It is present as a contaminant in commercial drums of toluene and glues, paints, and other products containing toluene. Gasoline also contains up to 7% benzene, so gasoline sniffers are at risk for the effects of benzene as well as the other components in gasoline (Sharp and Korman, 1981).

Methylene chloride is used as a solvent in spray paints, thinners, and other inhalable products (Sharp and Korman, 1981). It is converted in the body to carbon monoxide which combines with hemoglobin to prevent the normal transport of oxygen. The lack of oxygen can be sufficient to cause brain damage or death (Rosenberg and Sharp, 1992). Exposure is of particular concern for patients with certain heart ailments, and for smokers, as cigarette smoking also produces carbon monoxide.

9. Fetal Solvent Syndrome

Little direct evidence exists for a "fetal solvent syndrome" as a result of exposure to solvents during pregnancy. However, this possibility has been suggested by authors who studied infants of mothers who chronically abused solvents (Tenebein, 1992) and at least one study of mothers who were exposed to solvents at work (Holmberg, 1979).

In addition to possible direct effects, solvents may augment fetal alcohol syndrome so that it occurs at lower than usual levels of alcohol consumption. Other causes of fetal abnormalities may include poor nutrition, abuse of other substances, and genetic factors (Rosenberg and Sharp, 1992).

With so little knowledge, and yet all the potential dangers, every effort should be made to decrease the exposure of pregnant women to high concentrations of solvents.

Tolerance and Withdrawal

In a 1988 report, Fornazzari, who has had many years experience working with solvent abusers both at the Ontario Addiction Research Foundation and the Clark Institute of Psychiatry at the University of Toronto, states that: "Physical and psychological dependence and tolerance are reported in all chronic users" (Fornazzari, 1988). A review of the literature, although indicating some differences in opinion (Winger et al., 1992; Press and Done, 1967), generally supports his statement (Korman, 1977; De la Garza et al., 1976).

Tolerance has been reported after regular abuse for periods as short as three months. A typical progression is that "over a one or two year period, the user may experience less effect with eight to ten tubes of plastic cement, for example, than was noted initially with one or two" (Done, 1973).

Withdrawal generally begins within hours to a few days after cessation of use, but may not begin for as long as a week (Dyer, 1987). Symptoms of withdrawal include irritability, aggressive behaviour, restlessness, depression, lethargy, and drug (solvent)-seeking behaviour. A delirium tremens-like syndrome has even been described (Merry and Zachariadis, 1962; Todd, 1968; Nylander, 1962) which includes: increased irritability, tremors, sleeping difficulties, and hallucinations.

Withdrawal from chronic solvent use can result in serious complications, although they would appear to occur relatively rarely. Cardiac arrhythmias (irregular heart beat) and significant electrolyte imbalances (for example: sodium and potassium) have been associated with solvent use, each of which could complicate withdrawal and be potentially life-threatening.

Emergency Treatment

If a sniffer is suffering from:

- a state of collapse;
- chest pain;
- shaking, trembling, or convulsions;
- semi-consciousness or coma;

follow the procedure outlined below.

1. Remove the solvent product and any plastic bags or rags. Loosen clothing around the neck and chest to make breathing easier. If indoors, open windows and doors to let in fresh air and ensure adequate ventilation.
2. Lay the person on his/her stomach with the head to the side to prevent vomit from being inhaled.
3. Cover the person with a blanket or coat to keep warm without inhibiting breathing.
4. Send for medical help or phone for an ambulance whichever is quicker. Get person to hospital as soon as possible.
5. Retain the solvent and send it to hospital with the ambulance crew.
6. If breathing has stopped, begin mouth-to-mouth resuscitation immediately. Check for pulse as well since CPR may need to happen as well as mouth-to-mouth. (O'Connor, 1983)

The Special Needs of Adolescents

Adolescent Development

Adolescence is a period of change—a time of rapid developments in body, mind and social relationships. However, it is not the change by itself that makes this period so unique. Earlier periods of childhood involve more explosive changes. What makes adolescence so different is awareness of the changes that are taking place and the increased possibility of self-control.

- **Stages of Development**

  Early, middle and late adolescents are at different stages of development and psychologists can provide detailed descriptions of how 11-year-olds are generally different from 18-year-olds (see "Some Highlights of Teen Development" on page 26). These descriptions can be helpful, but be careful applying generalizations that don't take into account the reality of individual differences and cultural influences.

  Adolescence as a distinct social group is a recent historical invention. Up until this century, there were only children and adults. Youth were expected to take part in the general business of adult life. The average age of the pony express riders of the American West was just over 15. In Shakespeare's famous love story, *Romeo and Juliet*, Romeo was 17 and Juliet was only 14. History has many examples of youth being thrown into leadership roles by circumstance and succeeding. Joan of Arc was only 17 when she led the French armies to victory against the English.

  Our present culture views adolescence as a time of preparation, a time when serious social responsibility should not be undertaken. While this view protects teens from the pressures of responsibility long enough for them to get an education, it also prolongs dependence and frustration in those eager to get on with their life journey. In our society, the primary role for youth is as student, but we must be careful not to assume that this is all they are capable of doing or that this is the natural order of things.

- **Ambivalence**

  Teens often feel caught between two worlds: they want to get on with life, but are uncertain about leaving behind familiar comforts for the unknown risks that lie ahead.

  Childhood has some definite attractions. In some ways, children are freer than adults. If they feel like doing something, they do it. Their obligations are few, they are not always speculating about what other people think, and the world is still full of mysterious things to explore.

Yet children do not have the control over themselves or their circumstances to be able to move down the road of life independently. Freedom is provided to them by the care and protections given by others. To be able to move forward, they must leave something behind.

When exploring anything, it is natural for us to cycle between the known and the unknown, with deeper and deeper excursions into the unknown as confidence builds. Finally, the unknown becomes familiar, a new home. In the same way, the transition from childhood to adulthood involves frequent cycles back to childlike ways for reassurance. Gradually, the reassurance is less satisfying and the outward move more compelling.

Confusion and tension are normal. One moment there may be sadness and longing for the same things that are, in the next moment, openly ridculed as being childish. Teens are on an emotional rollercoaster and it takes a fair bit of energy just to hang on. And, like a real rollercoaster, it sometimes helps to laugh, scream, and hang on to the person next to you.

- **Rebellion and Self-assertion**

  Self-assertion is one of the teen's key struggles: developing an image of themselves as being a confident and independent traveller. Teens felt that it is essential to start thinking for themselves and not rely on others to tell them what to do. In this context, any authority can seem like a threat and any restriction, no matter how reasonable, can be seen as a challenge to their personal honour.

  Teens want to be cool, to appear competent and independent. Learning and subordination look and feel childish to them. Making mistakes is definitely "uncool," and trying anything new in full view of others is a huge risk. But when teens see competence and expertise in others they are often greatly attracted by it.

- **The Move to Independence**

  It's important to keep in mind that the word teen does not comprehensively describe a uniform "mass." Many common changes in thinking, emotional, physical, moral and social development occur as adolescents move from their early teens to their late teens. Therefore, a program for 11-year-olds may not be suitable for most 19-year-olds. But also remember that teens are people first, and they can't be pigeonholed any more than adults can.

Some Highlights of Teen Development*

Area	Early teen 11 - 14	Mid teen 15 - 17	Late teen 18 - 20
Thinking	Concrete thinking; unable to grasp long term consequences of actions	Impulsive and unpredictable; begins to think abstractly	Most can now think in the abstract
Physical Development	Rapid changes make for discomfort and self-consciousness	Growing acceptance of body	Accepts adult body
Identity	Self-concept changing from child to adult; awkward and shy; looks to authority figures for guidance	Preoccupied with self and own concerns; moody; limited social skills; views authority figures as threat	Appreciates others' needs and feelings; views authority figures as equals
Family	Strong, but ambivalent ties to family	Struggle for independence and autonomy; constant testing of limits	Reestablishes ties with family
Peers	Same-sex friends most common	Strong peer influence helps separation from family	Individual relationships sought and valued

* Adapted and printed with permission from: *American Journal of Maternal Child Nursing* Volume 11, Number 6, November/December 1986, page 339. "Care of Postpartum Adolescents" by Suzanne A. Fuller. (For more information on the subject of teen development, refer to *The Nature of Adolescence* by John J. Mitchell, published 1986, Calgary, Detselig Enterprises Limited.)

Adolescent Substance Abuse and Development Issues

While **experimentation** with drugs or alcohol is not uncommon in an adolescent, repeated or habitual use can have a serious, harmful effect on their developmental process. For example:

- if alcohol or other drugs are used to ease the awkwardness and embarrassment that often accompany rapid physical changes, the young person will have difficulty in developing a positive self-image;
- alcohol and other drug abuse greatly reduce the ability to think, leading to poor academic performance, which in turn leads to lowered self-esteem;
- alcohol and other drug abuse may affect the capacity for abstract thinking. Without abstract thought, it is very difficult to develop a value system;
- being part of a peer group is an important part of the developmental process. However, the young person who is chemically dependent will have difficulty maintaining friendships. The inability to form meaningful relationships leads to isolation and despair, and may inhibit the development of a sense of identity and capacity for intimacy;
- a young person's chemical use can become the focus of family conflict, which makes the separation process more difficult and sometimes leads to irreconcilable differences.

Other problems that often accompany adolescent drug abuse include family breakdown, substance abuse problems in other family members, school-related problems, involvement with the legal system, unemployment, and poverty.

For many young people, behaviours such as rebelliousness, poor school performance, delinquency, and criminal activity; and personality factors such as low self-esteem, anxiety, depression, and a lack of self-control which are often associated with adolescent drug use actually exist before drug use begins (Kandel, 1975). As discussed previously, this is particularly true for young, chronic sniffers.

Whether these problems lead to drug use or occur because of it, they must still be addressed. This might be at the prevention, intervention or treatment levels. In the last few years, significant gains have been make toward understanding adolescent substance abuse. Studies have shown:

- that adolescent drug abusers are usually multiple drug users who are also experiencing serious personal and social problems;
- that their family psychological and social problems generally occur before drug use begins.

It is now also recognized that adolescents' patterns of drug use and their treatment needs differ significantly from those of adult abusers. While the primary treatment goal of most programs for adolescents is to help the young person stop or reduce their use of drugs or alcohol, treatment goals often include changing clients attitudes so that they are committed to working on their personal and situational problems in a positive way. Motivating the chronic sniffer is not only the most challenging, but also the single most important element in helping the teen change (Beschner and Friedman, 1985).

Assessment

Because of sniffers' social/psychological characteristics and because of the stigma attached to solvent abuse, sniffers:

- deny or under-report sniffing activity;
- suffer from low self-esteem; feel they are not worthy of receiving help;
- do not generally use traditional sources of help for their problems with solvent abuse; do not generally self-refer;
- will most likely be experiencing difficulties in other areas of their lives.

There are a number of factors which must be considered when assessment begins, including the following.

- **Medical Attention**—Does the young person require immediate medical attention? Factors to consider would include breathing difficulties, disorientation, muscular and joint pain, or any other acute symptom identified by the young person. A thorough medical examination should be scheduled as soon as possible as part of the assessment process, regardless of emergency needs.
- **Detoxification**—Some, but not all, young sniffers will require referral to a detox centre. An important factor to consider is whether or not there is appropriate and sufficient monitoring or supervision in the young person's immediate living situation. A detox centre geared primarily towards adult alcoholics may not be an appropriate setting for a young, chronic sniffer. If space at a detox centre is not available or not appropriate, other alternatives can be explored. Is there a sniff-free environment where the young person could be temporarily housed, such as the home of a relative or friend?
- **Suicide**—Some young inhalant abusers will have been identified because of a suicide attempt or because of the expression of suicidal thoughts. In this situation, it is important to determine if the young person is in any immediate danger to him/herself. If the young person is living in an unstructured, unsupervised environment, consider whether he/she may be safer in an alternate situation. It may be necessary to call upon mental health personnel for assistance at this point.

The assessment should be regarded as a process—the first step in establishing a trusting relationship with the young person and learning about his/her life circumstances. This cannot be accomplished solely through an intake interview or an assessment questionnaire, although both may be useful. It will be necessary to obtain information from significant

others in the young person's life, such as teachers, health workers, social service personnel, parents and guardians. Observation of and interaction with the adolescent will be a significant aspect of the assessment. These processes may take place over a period of several weeks.

While sniffers are unlikely to seek assistance for inhalant abuse directly, they may ask for help for other related problems such as:

- school-related difficulties;
- problems with the legal system;
- family problems;
- lack of job opportunities;
- problems with finances, inadequate housing, medical problems.

Therefore, it is important to recognize that the initial "assessor" may not be a person working directly for an addictions agency. Although this person may be working in a related field, she/he is in the best position to assume the role of primary counsellor. While it will be important to consult and work cooperatively with addictions agency staff, it is equally important to ensure that the young person is not simply "dumped" into the lap of another agency before a working relationship is established. Helping professionals can work with young sniffers in a variety of settings. The key to developing a successful relationship resides initially in the ability of the helping professionals to engage the youth and to inspire them to want to change.

In summary, the following guidelines concerning assessment should be considered.

1. The assessment should be regarded as one step in the intervention/treatment process. Establishing a trusting relationship is critical.
2. The assessment may take time to complete. It may be necessary to work with the young person for a number of weeks to obtain enough information for an accurate assessment.
3. Information should be gathered from other people who may be involved with the young person: parents, teachers, social workers, legal personnel, and medical staff.
4. A thorough medical examination should be done as soon as possible.
5. Some sniffers may have poorly developed reading and writing skills. Questionnaires and/or other written assessment tools may be of limited use.
6. The young sniffer should be given assistance with other life problems. This will show the young person that helping professionals care and are willing to help.

Real Life Situations for Group Discussion

1. Emile is 15 years old. He has a long history of sniffing, minor delinquencies and truancy. Last night, he broke all the windows in his aunt's house and was charged with willful damage. You as the family support worker have been working with Emile, and his social worker now requests that you attend court with him to help resolve the situation. When you ask Emile what happened, he tells you that his mother and aunt were drinking inside the house and wouldn't let him in because he was sniffed-up. He also blurts out that he is an addict and deserves to die. Everyone (Mom, Emile, the social worker and the Judge) is looking to you for a recommendation and a plan of action. What do you do?

2. Glen is a 14-year old chronic sniffer. He was placed at a youth assessment centre because of his sniffing behaviour, truancy and minor delinquencies. The staff at the centre felt that he was extremely difficult to reach, but he eventually completed the program. The first day he was out, he skipped school at noon and got sniffed-up. His mother called the social worker who in turn placed him back at the Youth Centre. You have been called in as the probation worker. What will you do?

3. Glenda is 13 years old. Her mother is an alcoholic who has been in and out of treatment programs for years. Glenda often misses school to look after her younger siblings when her mother is on a drinking binge. The children have been taken into care by the Department of Family & Social Services on many occasions. Lately, Glenda has been coming to school sniffed-up. When confronted, however, she denies the fact. Her teachers are concerned but, at the same time, they can't allow a student who is so obviously stoned to remain in the classroom. This leads to more and more absenteeism on Glenda's part, and contributes to her sniffing behaviour. You are the school counsellor and have been asked to "straighten Glenda out". How?

4. You and a co-worker are leading a group of young sniffers. During a break in what you consider to be a very productive session you overhear the group discussing hallucinations that they had while sniffing together last night. Observing them, you realize that you've never before seen them so alive, so vibrant, so animated. Where do you go from here?

5 You are a youth worker and have been working with several young sniffers in the community. The school calls you, reporting that a couple of the kids are truant. The school suspects that they are sniffing together. You go to an abandoned house (a favourite sniffing spot) and find nine totally wiped-out kids there. You only know two of them and one older boy is threatening you with a hockey stick. What do you do now?

6 You are an addictions counsellor. An upset parent calls you after finding out that her daughter was sniffing with some friends after school. She states that her daughter is "sick" and wants her immediately removed from the home and placed in a treatment centre before she contaminates the younger children. What do you do?

7 You are a family-school liaison worker and have been asked by the school to work with two brothers, ages 14 and 15 years, who are known sniffers. You visit the home and find that the family is very close. The parents obviously have an abundance of love and concern for their children. Everything seems rosy until you find out that every night after supper, the whole family sits down to watch T.V. and share a bag of sniff. The family does not perceive that they have any problems and definitely makes it clear that they don't appreciate your interference and invasion of their privacy. What do you do?

Community Prevention, Intervention, Treatment and Aftercare

Overview

Prevention, intervention, treatment and aftercare should not be seen as distinct entities, but rather as a continuum. All parts of the continuum are necessary to respond to the needs of adolescent sniffers.

Short-term programs, while helpful, do not adequately address the complexity of the factors that give rise to and support inhalant abuse. There is an urgent need to develop aftercare programs. Jenson et al., (1986) reported in their review of treatment outcomes that: "even after excellent community-based treatment, troubled adolescents often return to their former behaviours upon reentry to the community, failing to generalize behavioural changes accomplished during treatment to situations in their daily lives."

The weakness of residential treatment may in fact be the strengths of community-based intervention. A community-based program can facilitate change as well as offer opportunities to practice the application of new skills and knowledge in a supportive and enduring environment.

This section focuses specifically on community-based programs.

Several programs have now been developed in North America specifically for solvent abusers. While many alcohol and drug treatment centres will accept sniffers into their programs, they are generally treated much the same as the rest of the population with generally poor outcomes as a result (NIDA Monograph, 1992). Some programs which have been developed solely for adolescent solvent abusers are briefly listed on the following pages. While these programs have been successful in reaching and treating chronic inhalant abusers, it would be inappropriate to suggest that any one of them could or should simply be imported and applied anywhere. Rather, they have been included to illustrate aspects of successful program development.

Examples of Inhalant Abuse Programs—Canadian

Ranch Ehrlo Volatile Substance Abuse Program

Admission Criteria: The program is limited to Native males between 13 and15 years. Younger children, unless extremely chronic cases, are probably handled better in a family resource centre. Older youth (16-18) may be accepted if there is a clear commitment to accept help.

Program: The residential treatment program of the Ranch involves four phases: detoxification, community access, community participation and discharge. Each phase is characterized by an increasing social responsibility requiring new coping skills learned in the treatment process. The treatment process is holistic in that all aspects of a resident's life are addressed, including physical well-being, social learning, recreation, education, culture and resolution of family problems. A developmental approach is used.

Contact: Director
Ranch Erhlo Society
Box 570
Pilot Butte, Saskatchewan
Phone (306) 352-1694
Fax (306) 757-0599

Adolescent Program at Calder Centre

Adolescent Program at Calder Centre is a co-ed program treating solvent abuse as well as other kinds of substance abuse. To obtain information on this program, contact the following:

Contact: Adolescent Program at Calder Centre
2003 Arlington Avenue
Saskatoon, Saskatchewan
S7K 2H6
Toll free: 1-800-667-9982
Phone (306) 933-5846

Poundmaker Adolescent Treatment Centre

Admission Criteria: The Poundmaker Adolescent Treatment Centre (PATC) offers a three to six month addictions program for youth ages 12-18. Boys live in the residence, but girls live outside and come in for day programs. There is a total of 30 beds plus 15 day treatment spaces.

Program: The program averages three to six solvent abusers in treatment at a time. Referral agents are encouraged to detox the youth where possible prior to admission. The inhalant abusing client is expected to stay for a minimum six-month period.

Davis Inlet 1993: PATC was the host organization who responded to the crisis in Davis Inlet to treat children who were identified through the national media as being chronic gasoline sniffers wanting to die. PATC, with its parent organization in St. Albert, delivered an intensive detoxification/treatment/aftercare program (six months in Alberta, the rest in Davis Inlet). Davis Inlet is moving from crisis to healing and is an excellent example of a comprehensive and community development response to an inhalant abuse problem.

Contact:
Director
Poundmaker Adolescent Treatment Centre
4637-45 Avenue
St. Paul, Alberta
TOA 3A3
Phone (403) 645-1884
Fax (403) 645-1883

Sagkeeng Solvent Abuse Program

Located in the Fort Alexander Reserve, 140 kilometers northeast of Winnipeg, the Sagkeeng Solvent Abuse Program works in conjunction with the Virginia Fontaine Memorial Centre in providing a holistic treatment program for adolescent solvent abusers.

The program is a voluntary, minimum 180-day, round-the-clock residential treatment program designed to meet the emotional, mental, physical and spiritual needs of Native adolescents (13-17). The focus is on youth; however, their families and communities are also included in the maintenance program of a solvent-free lifestyle.

The pre and post treatment programs employ the concept of intervention, prevention and aftercare counselling supported by professional caregivers but also stresses the Seven Teachings of the Laws of Creation common to all First Nations people: respect, love, honesty, courage, humility, wisdom, truth.

Contact:
Director, Sagkeeng Solvent Abuse Treatment Centre
Box 508
Pine Falls, Manitoba
ROE 1M0
Phone (204) 367-9009
Fax (204) 367-4271

Asokina Centre - Calgary, Alberta (Wood's Homes)

1. **Breakthrough Solvent Abuse Program**
   - intensive residential treatment for First Nations youth ages 15-18 (sometimes younger) who are identified as chronic inhalant users.
   - male or female, eight beds.
2. **National Program**
   - 14 beds for First Nations youth from Alberta, British Columbia, and the Atlantic provinces with suspected or confirmed inhalant use.
3. **Sacred Summit Lodge**
   - eight beds for 11- to 18-year-old First Nations females with addictions including inhalants.

Contact: Contact program directly at
(403) 270-1731
or through Community Resource Team at
(403) 299-9699

Green Pastures

Program: serving males aged 12 to 17 who are or have been solvent abusers. Services include group homes.

Contact: Supervisor
Green Pastures
P.O. Box 98
Vassar, Manitoba
ROA 2J0
Phone (204) 437-2347

Inhalant Abuse Treatment Program

Program: six-month residential program, plus a follow-up of up to six months serving clients from all over the North, as far as northern Quebec and Newfoundland. . Nine-bed facility for male and female adolescents.

Contact: Clinical Director, Inhalant Abuse Treatment Program
P.O. Box 1290
Yellowknife, Northwest Territories
X1A 2N8
Phone (403) 920-4050
Fax (403) 920-4112

Community Program Development

In Alberta, we have made great strides towards the development of prevention strategies for youth substance abuse in general. These strategies apply equally to the prevention of inhalant abuse. There appears, however, to be a need to intensify preventive efforts at particular times of the year (such as the onset of holidays and summer) when sniffing activity increases. Involving parents and community leaders will greatly improve prevention efforts.

While a specific community-based approach to intervention and treatment for inhalant abusers has yet to be developed, some of Alberta's treatment programs accept inhalant abusers and follow well-established treatment procedures. It is important to check with the admissions coordinator of any treatment centre to find out if inhalant abusers can be admitted.

It is fully recognized, however, that a multifaceted, multidisciplinary approach will greatly enhance prevention, intervention and treatment programs (Lowenstein, 1984; Smart, 1986).

Approaches that increase program effectiveness include the following.

- **Engaging the youth in a trusting relationship.**

  This is facilitated through the primary counsellor or through a "big brother or sister" type relationship. The young person needs to feel that there is someone who cares and will be there for them regardless of the fact that he/she is a sniffer.

- **Involving the young person in activities where he/she can be successful.**

  It is important to build on strengths, not accentuate weaknesses. Because of lack of self-esteem, poor social skills, poor academic performance, and other problems, it will sometimes be difficult to find an area where the young person feels comfortable. Be creative.

- **Attending to other related problems.**

  The young person's immediate life circumstances must be addressed. It will be important to get the young person into school, upgrading classes or vocational training. The family situation must be assessed in terms of existing drug problems, physical or sexual abuse, and other problems.

  The caregiver who becomes involved with the young person may recognize that inhalant abuse is a problem. However, the young person may be unwilling to acknowledge the abuse for some time. Initially, it may be necessary to assist the young person in whatever area he/she has identified as being the problem and deal with the issue of inhalant use after a relationship of trust and understanding has developed. While this is a variation

from more traditional approaches in the addiction field, it is accepted as standard clinical practice when working with inhalant abusers. This is one practice which differentiates solvent abuse treatment programs from programs for other types of substance abuse.

It should also be noted that with substance abuse in general, motivation and social stability are highly related to treatment effectiveness. "The more motivated an individual is to participate in treatment, the higher the likelihood of success" (Saskatchewan Alcohol and Drug Abuse Commission, 1985).

Given that most sniffers do not self-refer and experience high degrees of social instability, it is even more important to pay attention to identified related problems.

- **Focusing on life skills**

  Most sniffers display poor problem-solving and coping skills. They must learn new ways of dealing with reality, instead of trying to escape from it.

- **Providing a continuum of care**

  Time plays an important role in the young person's recovery. There is evidence to suggest that the longer the involvement, the greater the likelihood of success.

  The key to effective intervention or treatment is a detailed aftercare plan involving:
  - client's parents/guardians;
  - educational opportunities;
  - social support systems.

Using a community network

The community must be involved in a non-formal way including:
- community programs;
- recreational programs and facilities;
- social and cultural events;
- friendship centres.

An inhalant abuse program can take many forms. It does not need to be housed within four walls or owned by one particular agency. In fact, a successful program will by nature involve the cooperation, support and resources of a broad base of community agencies. There is a great need to be creative, innovative and realistic.

The most effective type of program will be one that incorporates prevention, intervention, treatment and aftercare in a continuum of service.

Programs and services that are developed for adolescent inhalant abusers can allow for greater participation and prevent the risk of labelling and stigmatization by providing a broad range of services to a wide range of young people (inhalant abusers or not).

Perhaps the most critical element of any program is community recognition of the problems that lead young people into inhalant abuse and community action to address these problems (O'Connor and Britton, 1987).

Much has been learned in recent years regarding programming for substance abusing youth. The following issues should be taken into consideration when developing community programs.

1. Non-stigmatizing access to services

Activities should be developed which are of interest to different target groups.

Activities can be designed to include information and programs related to social/recreational opportunities, the performing arts, criminal justice issues, health issues, substance abuse, housing, employment, ethnic and cultural enrichment, youth leadership and training, and lifeskills. This will prevent programs from being identified as being only for drug addicts and inhalant abusers, and allows young people access to services without fear of being negatively labelled.

2. Multiple points of entry

A young person may come initially for a recreational or health program. Only after learning more about other services and getting to know staff, will he/she be comfortable in seeking assistance with his/her inhalant abuse problem.

3. Programs based on the needs of the community

The need and types of service will vary considerably from one community to another. A comprehensive youth health care facility would not be feasible in most small rural communities. A program that is effective in one rural area or large urban centre may not be transferable, without considerable modification, to another community of similar size.

4. Community networks

The resources that are already available in the community should be used. Most communities can offer a network of human services including health, social, and educational services, as well as community volunteer groups. A well-coordinated effort among these groups will be necessary in order to develop a program. In some communities, additional resources may not be needed. Ensure that a broad spectrum of the community is involved including:

- police;
- health professionals;
- educational institutes;
- parents;
- businesses;
- friendship centres;
- local, provincial and federal government agencies;
- youth programs;
- volunteer groups and service clubs;
- churches.

5. Staff and volunteers

There are a number of critical prerequisites for working effectively with young people. These are:

- ease in relating to youth;
- an ability to project a positive role model;
- an understanding of adolescent development, and the social situations which both give rise to adolescent problems and help adolescents deal with these problems;
- a desire to work with young people.

Other desirable qualities that will improve success are understanding, compassion, empathy, enthusiasm and friendliness, a non-judgemental approach, a sense of humour, patience, honesty, the ability to refrain from giving advice, recognition of one's own values, and an appreciation of and respect for other cultural values.

6. Youth involvement in the design, implementation and delivery of services

The involvement of young people in the development and operation of the program is critical to the success of a community-based youth program. Cooperation between adult professionals and young people will help to ensure that the program will be accepted by youth and will be responsive to their needs. Allowing young people to assist in designing a program or service will encourage participants to take ownership for the program. This will increase participation in activities and decrease problems such as vandalism and rule-breaking. Young people can be encouraged to form local youth committees, sit on program boards or advisory committees, and act as peer counsellors or volunteer staff.

Peer support programs are one way that youth can be involved in the delivery of services. Program goals are:

a) to create a school or agency climate that encourages the development of responsible independence and a positive identity;

b) to create opportunities for adolescents to learn how to actively and intentionally use their experiences to gain new levels of confidence and competence;

c) to encourage opportunities for early intervention to deal with adolescent difficulties; and

d) to involve adolescents in identifying and meeting their perceived needs.

AADAC can provide consultation and materials to counsellors, parents and administrators who wish to set up peer support programs in their schools or their community programs.

AADAC's commitment to youth programming has resulted in the production of a number of resources. Developed for adults working directly with teens or in support of teen programs, these resources help examine how the development of competence and independence in adolescents relates to the prevention of alcohol and other drug abuse.

An Example of Community Action
Treatment Follows Youth Detox Camp, 1988

In 1986 in the St. Paul area, a 12-year-old girl died as a result of sniffing typewriter correction fluid. An immediate effect was that the St. Paul office of AADAC became more involved in the issue of inhalant abuse. Several initiatives arose as a result of this tragedy, including public and merchant awareness, along with an interagency intervention program for youth considered at risk.

In the spring of 1988, a seven-year-old boy died from sniffing gasoline. This resulted in a strengthened resolve to do something more directly related to treatment. Working effectively with these children had become a major concern for everyone involved: social workers, parents, teachers, AADAC staff and the staff of the National Native Alcohol and Drug Abuse Program (NNADAP).

Research and local experience indicated that treatment is not realistically possible without detoxification and that, in the case of solvents, detox for chronic users can require from 30 to more than 60 days. There also appeared to be no proven systematic approach to effective treatment.

The challenge? Detox the children. Keep them free from all substances to ready them for treatment and, at the same time, strengthen community awareness and support so the children could participate in an aftercare program as well. The outcome of numerous discussions was commitments by three groups: the Mannawanis Native Friendship Centre to pilot a pretreatment program; Social Services (provincial and reserve agencies) to sponsor a dozen children ages 7 to 12; and AADAC to facilitate and/or provide treatment services.

The detox program was designed as a 30-day wilderness camp. It was structured to be as action-oriented and flexible as possible to meet the needs of these children who displayed characteristics such as mood swings, hyperactivity, short attention spans, learning and memory disabilities, disorientation, paranoia, hallucinations or delusions (e.g., devil images), and so on.

Staff were hired with a variety of skills and interests, including music, drama, Native awareness, arts and crafts, cooperative games, life skills and basic counselling training. They were encouraged to recognize and make the most of teachable moments—around the evening campfire where group discussions readily occurred, or during one-on-one interactions between a child and an adult leader at any time. AADAC staff participated initially in a group activity such as kite making, to get to know the children, and then later to introduce lessons around inhalants and to provide a bridge into the treatment and aftercare components.

While the children were at camp, significant caregivers (parents, family support workers, social workers) were brought together with AADAC staff and the camp director to develop comprehensive treatment and aftercare components.

Following the 30-day pretreatment camp in August, the children returned to their homes or foster homes and entered school in September. All participants—sometimes in subgroups, sometimes individually—attended weekly sessions with AADAC counsellors.

Throughout, when a child identified a product and how he/she obtained it, a return visit was made to a parent, a school, or a merchant to explore ideas for limiting access. For parents and schools, it meant discarding toxic substances, locking them up, or replacing them with non-toxic options where possible. Locking gas caps for vehicles and buying water-based whiteout for students were two immediate choices. For merchants, it meant perhaps changing the location of a product in the store (so it was less accessible to shop-lifters) or monitoring sales of identified items to youth.

Teachers were brought into the supportive network of caregivers and the treatment process was regularly reviewed. Staff terminated treatment sessions once the aftercare program was more defined and they facilitated entry onto that phase.

One of the camp staff continued working at the Friendship Centre to deliver the aftercare program. Children were brought together on a regular basis—twice a week to begin with, then weekly, then biweekly until the program was terminated in January 1989. The sessions involved both group process and recreation activities. This was supported again through the interagency network and, as much as possible, children were assisted in developing positive coping skills and were encouraged to make use of community recreation/social programs.

At the time of termination, only one child was known to have relapsed. She described a very disappointing experience compared to previous sniffing episodes, saying, "It wasn't the same as it used to be." One child received an award in school for being the most improved student. Several maintained their recreation options, with one child doing exceptionally well in gymnastics. All children continued to receive support from their individual teachers who were very pleased to be part of the program.

Was it worth it? Definitely, yes. As with every developing program, there were a few rough spots, but overall the experience was rewarding for all involved. The community grew more optimistic about their ability to deal with the inhalant abuse issue. There was a sense of completeness to the plan and a definite belief that together they could make a difference.

For more information, contact:

AADAC
St. Paul, Alberta
T0A 3A2
Phone (403) 645-6346
Fax (403) 465-6249

Group Project

Develop a strategy to address inhalant abuse that could be undertaken in your community. Be realistic! You should consider whether your energies would be better used coordinating existing resources or developing new programs. Keep in mind that money is scarce and competition for dollars is intense. You may want to prioritize your objectives into long-term/short-term or low-cost/high-cost. Remember that the journey of a thousand miles begins with a single step.

1. List the steps that you might use to identify the extent of the problem in your community.
2. List possible activities or projects you would like to develop as part of the program. Choose a project or projects that you would like to develop as a part of your local inhalant abuse program.
3. List the potential collaborators in implementing the program and approaches you would use to involve them.
4. List the potential barriers to the program. These barriers might be people, organizational constraints, policies, etc. Identify the steps you would take to lower or remove the resistance.
5. Plan how you will make your presentation to the group.

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Videos*

A Wasted Breath: Kids on Inhalants

Audience:	Junior and Senior High, Adults	**Date:**	1992
Subject:	Personal development Inhalants/Solvents	**Rating:**	Very Good
Purchase from:	Hazelden 1-800-328-9000	**Cost:**	$150.00US
		Length:	19 Minutes

This live-action video talks directly to kids about the dangers of inhaling common, legal household products and substances. Kids talk about their own experimenting with substance abuse, describing its emotional, and physical damage. They also speak of how peer pressure can be either an introduction to or a deterrent from drug abuse.

A *Wasted Breath* was the result of responding to the feedback from community agencies and school drug prevention and intervention professionals who, familiar with the video produced for adult viewing *Inhalant Abuse: Kids in Danger/Adults in the Dark,* asked the producers to create a program that could be shown without hesitation to children. (Discussion guide available).

The Choice is Yours

Audience:	Junior & Senior High, Adult	**Date:**	1987
Subject:	Personal Development	**Rating:**	Very Good
Purchase from:	Addiction Research Foundation 33 Russell Street Toronto, Ontario M5S 2S1 Phone: 1-800-661-1111 Fax: 416-593-4694	**Cost:**	$100.00
		French:	version also available "A Vous Choisir"
		Length:	29 Minutes

This video is divided into segments dealing with drugs and crime; cannabis; cocaine and crack; and inhalant abuse. The straight, to-the-point content examines the consequences of making the wrong choice about drugs and offers help in making the correct choices.

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* If you are an Alberta resident, these videos may be available from on loan from your local AADAC office.

A Hit For Mike

Audience: Senior High, Adult

Date: 1984

Subject: Native People, Inhalants/Solvents

Rating: Good

Purchase from: Health Canada
Health Programs Support Div.
Medical Services Branch - Resource Centre
11th Fl. Jeanne Mance Building
Postal Locator 1911C, Tunney's Pasture
Ottawa, Ontario K1A 0L3
Phone: (613) 952-2117
Fax: (613) 954-8107

Cost: no charge

Length: 23 Minutes

Gas sniffing is becoming one of the more common and most accessible means of getting a cheap and extremely dangerous high. Even children are learning how to use solvents stored in their homes and communities. *A Hit for Mike* looks at why children begin sniffing, illustrates the need to interest children in alternative activities that put them in touch with their culture, and develops in them a sense of pride and self-esteem.

Inhalant Abuse

Audience: Professionals, Medical Personnel

Date: 1988

Subject: Inhalants/Solvents

Rating: Very Good

Purchase from: Health Canada
Health Programs Support Div.
Medical Services Branch - Resource Centre
11th Fl. Jeanne Mance Building
Postal Locator 1911C, Tunney's Pasture
Ottawa, Ontario K1A 0L3
Phone: (613) 952-2117
Fax: (613) 954-8107

Cost: no charge

Length: 26 Minutes

Hosted by Jan Tennant, this production examines the short and long-term effects of experimental, regular and chronic use of inhalants. Dr. Louis Fornazzari, ARF, discusses effects on brain function and demonstrates brain damage via use of CAT scan pictures. Excellent for use with medical practitioners, this tape also examines the phenomenon of sudden sniffing death syndrome. Not to be shown to potential abusers.

Inhalant Abuse: Kids In Danger/Adults In The Dark

Audience:	Adult	**Date:**	1990
Subject:	Inhalants/Solvents	**Rating:**	Very Good
Purchase from:	Hazelden 1-800-328-9000	**Cost:**	$150.00US
		Length:	18 Minutes

It used to be called "Glue Sniffing." Today, kids as young as six are sniffing more than just glue to get high. Spray paint, nail polish remover, cleaning fluid, colored markers, paint thinner and 100 other legal substances found under the kitchen sink, on the teacher's desk or on the supermarket shelf are deliberately misused by over seven million children from all walks of life. The damage is immediate, not always reversible, and sometimes fatal.

Inhalants: Sniffing Your Way To Addiction

Audience:	Parents, Professionals	**Date:**	1991
Subject:	Inhalants/Solvents	**Rating:**	Very Good
Purchase from:	Image Media Suite 100, 1132 Hamilton St. Vancouver, B.C. V6B 2S2 Phone: (604) 689-9549 Fax: (604) 683-9369	**Cost:**	$149.00
		Length:	17 Minutes

NOTE: Use this resource with caution with sniffers and kids. Solvents, propellants and fuels are found in almost every home environment. Unfortunately, when inhaled, these chemicals can be a cheap, quick and deadly high. Inhalants have become the drug of choice for children under sixteen due to their availability. The adverse effects inhalants have on the body are reviewed in this program, including heart arrhythmias and kidney failure. A chemical dependency specialist discusses his experience with inhalant users, and how holistic treatment is usually the most effective. Viewers learn that using inhalants often leads to other serious drugs, and can end in death!

A Place In Between

Audience: Upper Elementary, Junior & Senior High

Date: 1987

Subject: Inhalants/Solvents

Rating: Very Good

Purchase from:
Native Counselling Services of Alberta
#800, Highfield Place
10010 - 106 Street
Edmonton, Alberta T5J 3S8
Phone: (403) 423-2141
Fax: (403) 424-1173

Cost: $50.00

Length: 14 Minutes

Beginning with a Cree narrative, this film (produced by Native Counselling Services of Alberta) portrays a young Native boy, his use of solvents and his subsequent hospitalization. The boy's doctor discusses his condition with his parents and the medical consequences become very apparent. At the end of the film, a Native elder speaks to other children about alternatives to use and feelings of self-worth.

Sniffing Stinks

Audience: Children

Date: 1991

Subject: Inhalants/Solvents

Rating: Very Good

Purchase from:
Health Canada
Health Programs Support Div.
Medical Services Branch - Resource Centre
11th Fl. Jeanne Mance Building
Postal Locator 1911C,
Tunney's Pasture
Ottawa, Ontario K1A 0L3
Phone: (613) 952-2117
Fax: (613) 954-8107

Cost: no charge

Length: 23 minutes

This video is intended for the use and understanding of children ages eight and over. Young people from the Whitedog Reserves speak frankly about sniffing and its effects, the reason for trying it and reasons not to. Most of the excuses given for sniffing are discussed by young people who have done it themselves or those who chose not to. Community leaders and young people point out other ways of dealing with the need for escape, recreation or companionship that may lead others to sniff.

The Kenora Regional Solvent Abuse Committee, who commissioned the production of this video has developed a guide to assist leaders in preparing activities before and after viewing this video. An annotated bibliography is attached.

The Sniffing Bear

Audience:	Elementary Upper Elementary	**Date:**	1992
Subject:	Inhalants use	**Rating:**	Good
Purchase from:	National Film Board of Canada Phone: 1-800-267-7710 Fax: (514) 283-7564	**Cost:**	$21.95
		Length:	8 Minutes

This animated video without words tells a tale that lends new meaning to old Inuit legends, blending images of breathtaking beauty with the language of the animal world to speak of a universal problem: drug abuse.

The following videos are also available free of charge from Health Canada. They have not been rated:

Up Your Nose Native teenagers go on a sniffing spree which ends in tragedy. (8 minutes)

79 Cent High A native couple learns how to recognize the signs of sniffing in their children and what to do ab out it. (13 minutes)

How We Stopped Sniffing Native children experience the negative aspects of glue sniffing. (18 minutes)

Solvent Abuse - A Matter of Life and Death This video deals with solven abuse north of 60 degrees. It also contains interviews with abusers and paretns whose children have died as a result of sniffing. Inuktitut, English subtitles, Frence subtitles. (28 minutes)

Sniff 'n' Huff A rock video intended to act as a deterrent to youth considering "sniffing." (5 minutes)

Spirit of the Forest An animated video on solvent abuse with resource book. English and Ojibway. (20 minutes)

For further information contact:

Health Canada
Health Programs Support Division
Medical Services Branch - Resource Centre
11th Fl. Jeanne Mance Building
Postal Locator 1911C
Tunney's Pasture
Ottawa, Ontario K1A 0L3
Phone: (613) 952-2117
Fax: (613) 954-8107